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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,015	11/05/2003	Ryuichi Katayama	Q77045	5832

23373 7590 09/12/2006

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EXAMINER

PATEL, GAUTAM

ART UNIT PAPER NUMBER

2627

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/701,015

Applicant(s)

KATAYAMA, RYUICHI

Examiner

Gautam R. Patel

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 are pending are pending for the examination.

Election/Restriction

2. Claims 13-20 stand withdrawn without traverse. Claims 1-12 remains for examination.

Claims 13-20 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to a non-elected program conversion method. Election was made without traverse in Paper dated 8/7/06.

NOTE: The examiner would like to thank Mr. Bernstein for prompt reply and election.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 U.S.C. § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6-8 and 10-12 are rejected under 35 U.S.C. § 102(e) as being anticipated by Hirai et al., US. patent 6,545,958 (hereafter Hirai).

As to claim 1, Hirai discloses the invention as claimed an optical head unit [see Figs. 16, 24, 26 and 32] including first second, third light sources; first second objective lenses and a photodetector, comprising:

- a first light source [fig. 32, unit 201] emitting a light with a first wavelength;
- a second light source [fig. 32, unit 201] emitting a light with a second wavelength;
- a third light source [fig. 32, unit 202] emitting a light with a third wavelength;

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a first objective lens [fig. 32, unit 212] irradiating said light emitted from said first light source onto an optical recording medium;

a second objective lens [fig. 32, unit 20213] irradiating said light emitted from said second light source or said light emitted from said third light source onto an optical recording medium; and

a photodetector [fig. 32, unit 233] receiving a reflected light from said optical recording medium [fig. 16, 32 and col. 24 line 40 to col. 25, line 37; col. 33, line 9 to col. 34, line 67].

5. The aforementioned claim 2, recites the following elements, inter alia, disclosed in Hirai: said first wavelength is shorter than said second wavelength, and said second wavelength is shorter than said third wavelength [col. 22, lines 50-62, col. 34, lines 7-67].

6. The aforementioned claim 3, recites the following elements, inter alia, disclosed in Hirai: said first objective lens is designed to have a spherical aberration canceling a spherical aberration caused when said light with said first wavelength passes through said optical recording medium having a first thickness of protective layer, and wherein said second objective lens is designed to have a spherical aberration canceling a spherical aberration caused when said light with said second wavelength passes through said optical recording medium having a second thickness of protective layer and to have a spherical aberration canceling a spherical aberration [col. 10, line 65 to col. 11, line 8 col. 35, line 50 to col. 36, line 28] caused when said light with said third wavelength passes through said optical recording medium having a third thickness of protective layer [col. 24 line 40 to col. 25, line 37; col. 33, line 9 to col. 34, line 67].

7. The aforementioned claim 4, recites the following elements, inter alia, disclosed in Hirai: said first thickness of the protective layer of said optical recording medium is smaller than said second thickness, and said second thickness is smaller than said third thickness [col. 15, line 56 to col. 16, line 29].

8. The aforementioned claim 6, recites the following elements, inter alia, disclosed in Hirai: said photodetector includes a plurality of light reception parts [fig. 26; col. 31, line 53 to col. 32, line 36].

9. The aforementioned claim 7, recites the following elements, inter alia, disclosed in Hirai:
at least of said light reception parts is divided by a division line in parallel with a tangent direction of said optical recording medium [fig. 26; col. 31, line 53 to col. 32, line 36].

10. The aforementioned claim 8, recites the following elements, inter alia, disclosed in Hirai:
at least of said light reception parts is divided by a division line in parallel with a radius direction of said optical recording medium [fig. 26; col. 31, line 53 to col. 32, line 36].

11. The aforementioned claim 10, recites the following elements, inter alia, disclosed in Hirai.
a diffraction optical device dividing at least one of said lights from said first light source, said second light source and said third light source into a zero order light, a+1 order diffraction light and a-1 order diffraction light. [col. 28, lines 1-12; col. 37, lines 26-45].

12. The aforementioned claim 11, recites the following elements, inter alia, disclosed in Hirai:
a grating pattern formed in said diffraction optical device is divided into a first area, a second area, a third area and a fourth area by a straight line in parallel with a radius direction of said optical recording medium and a straight line in parallel with a tangent direction thereof passing through an optical axis of its incident light, and wherein phases of said gratings of said first area and said fourth area and phases of said gratings of said second area and said third area are shifted from each other by $\pi/2$ [col. 28, lines 1-12; col. 37, lines 26-45].

13. The aforementioned claim 12, recites the following elements, inter alia, disclosed in Hirai:
said first wavelength is about 405 nm, second wavelength is about 650 nm, and said third wavelength is about 780 nm [col. 22, lines 50-62, col. 34, lines 7-67].

Claim Rejections - 35 U.S.C. § 103

14. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirai as applied to claims 1-4, 6-8 above in view of Furuta et al., US. patent 6,621,771(hereafter Furuta).

As to claim 9, Hirai discloses all of the above elements, including plural objective lenses and three wavelength laser diodes. Hirai does not specifically disclose an angle of deviation amount between tracks in innermost and outermost circumference.

However, angle of deviation concept is well known in the art.

Also more importantly, Furuta clearly discloses:

when an angle deviation amount between tracks in an innermost circumference and an outermost circumference of said optical recording medium and said division line in parallel with said tangent direction of said optical recording medium are θ_{min} and θ_{max} , respectively, said division line in parallel with said tangent direction of said optical recording medium is tilted by $(\theta_{min} + \theta_{max})/2$ with respect to a direction orthogonal to a track of said centers of said objective lenses [col. 3, line 36 to col. 4, line 50].

Both Hirai and Furuta are interested in improving the tilt mechanism in an optical disk device. Both show multiple objective lenses and multiple laser diodes with different wavelengths.

One of ordinary skill in the art at the time of invention would have realized that the system of Hirai would have been sensitive to tracking performance deterioration on the innermost tracks and this must be balanced with outermost tracks where this effect is minimal.

Therefore, it would have been obvious to have used a dual objective lens system as proposed by Furuta in the system of Hirai as taught by Furuta because one would be motivated to balance the tracking performance between innermost tracks and outermost tracks in the system of Hirai and provide better signal controls and improve quality of the signal [col. 3, lines 56-67; Furuta].

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15. The aforementioned claim 5, recites the following elements/steps, inter alia, disclosed in Furuta:

when said optical head unit is moved between an innermost circumference and an outermost circumference of said optical recording medium, a distance between a straight line including a track of a center of said first objective lens and a center of said optical recording medium is set to be shorter than a distance between a straight line including a track of a center of said second objective lens and said center of said optical recording medium [col. 3, line 36 to col. 4, line 50].

Other prior art cited

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Nakano (US. Patent 6674059)
- b) Matsuzaki et al. (US. patent 6650612)
- c) Saito (US. patent 6781943)

Contact information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is 571-272-7625. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2600) where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Dwayne Bost, who can be reached on (571) 272-7023.

Any inquiry of a general nature or relating to the status of this application should be directed to the Electronic Business Center whose telephone number is 866-217-9197 or the USPTO contact Center telephone number is (800) PTO-9199.

**GAUTAM R. PATEL
PRIMARY EXAMINER**



Gautam R. Patel
Primary Examiner
Group Art Unit 2627

September 6, 2006